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Telephone-Computer Hookup Expands Information Network

"THE OLD IDEA of phone is dead . . . See that black instrument on his desk? He thinks that's a telephone: But it's much more. It's an input device to the largest information network in the world."

These advertising lines announce the Bell System's part in the communications revolution—moving data for computers over the system originally developed for voice messages.

The phone system has many intricate parts, linked in the most complex of our technological nets. The handset is at once a network signaling device (the dial mechanism) and a microphone and speaker; terminal distribution lines lead to the central stations, which contain electronic switchwork to connect calls and handle accounting; finally there are the long lines or their equivalent in microwave relays, which now include the communications satellites, and could be thought of as the bulk carriers of information.

As a main custodian of the switching systems, Bell has been accustomed to the responsibility of managing the entire line of service. This also excluded competitors who offered more ingenious or merely cheaper kinds of handsets, message-takers, or computer interfaces.

BUT COMMUNICATION links from home or office are becoming the real bottleneck to universal access to computers.

The economics of a "computer utility" suggest that the cost of the computer itself will be insignificant compared to the connecting console (like an electronic typewriter or display screen), the user's memory file at the computer and the communication link: the living phone. How such facilities are expanded and controlled is one of the most important issues for the future quality of life in democratic society.

The issue finally erupted last year in the Carterfone case, in which Bell was sued for illegally squelching direct attachment of a radio retransmission invention to a standard telephone. The official tariffs had excluded all "foreigh attachments," but the FCC finally reversed this except where spurious signals might affect the electronic switching.

The new tariffs, now provisionally approved, allow direct connection of such attachments, provided the messages are fed through a simple company device to protect its lines. The company insisted, however, that only its own dialing unit be allowed. This means the ordinary customer cannot legally use handsets bought from another supplier.

This provision drew a strong dissent from FCC Commissioner Nicholas Johnson, who demanded that consumers' interests be represented by a formal hearing on the tariffs. Potential competitors and the Department of Defense (representing government users generally) have also complained at being barred from replacing mechanical dialing by computer-generated signals. (The company would, of course, monitor such devices.)

The complainants also seek the right to feed their own local switchboards directly into the lines.

DIRECT ENTRY of user data into phone lines is also generating new demands for standardizing the lines' quality. The company has never precisely defined the service it sells, except as the right to connect with "voice grade" lines. Many long distance lines are barely intelligible at times.

This is not quite good enough for computer connections, where hours of work could be faulted by a fraction of a second of unexpected noise.

The most exciting prospects for ordinary users from computer connections might be a selective answering service, which could free thousands of secretaries for more meaningful work and bring to the home telephone a joyful silence.